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Produced by the NASA Center for Aerospace Information (CASI)

A No-Frills Approach to Migrating from Pro/INTRALINK 3.4 to Windchill 8.0

Steven LaPha Jr.
United Space Alliance, LLC.

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Introduction

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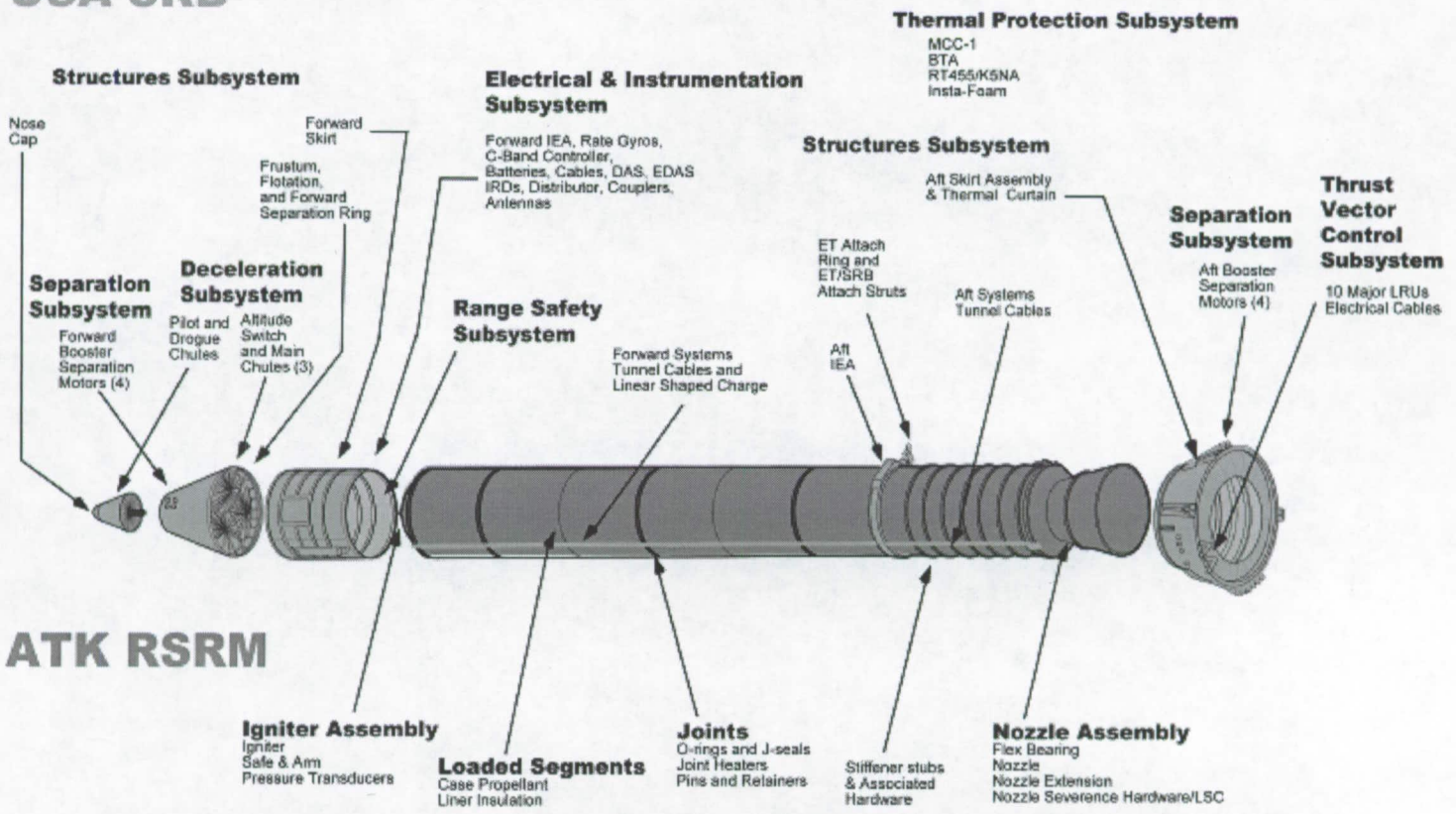

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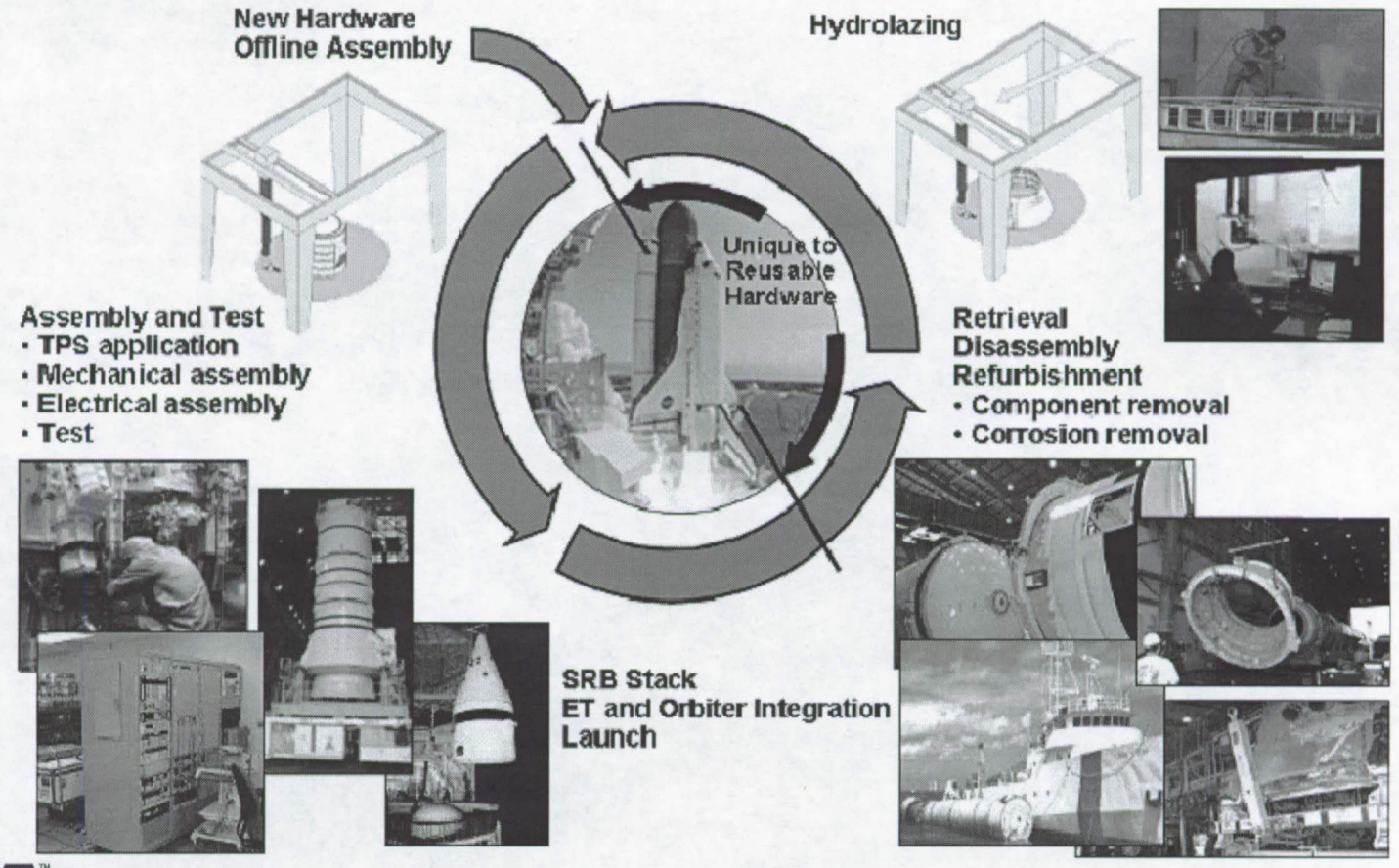
PTC user 20th

Introduction



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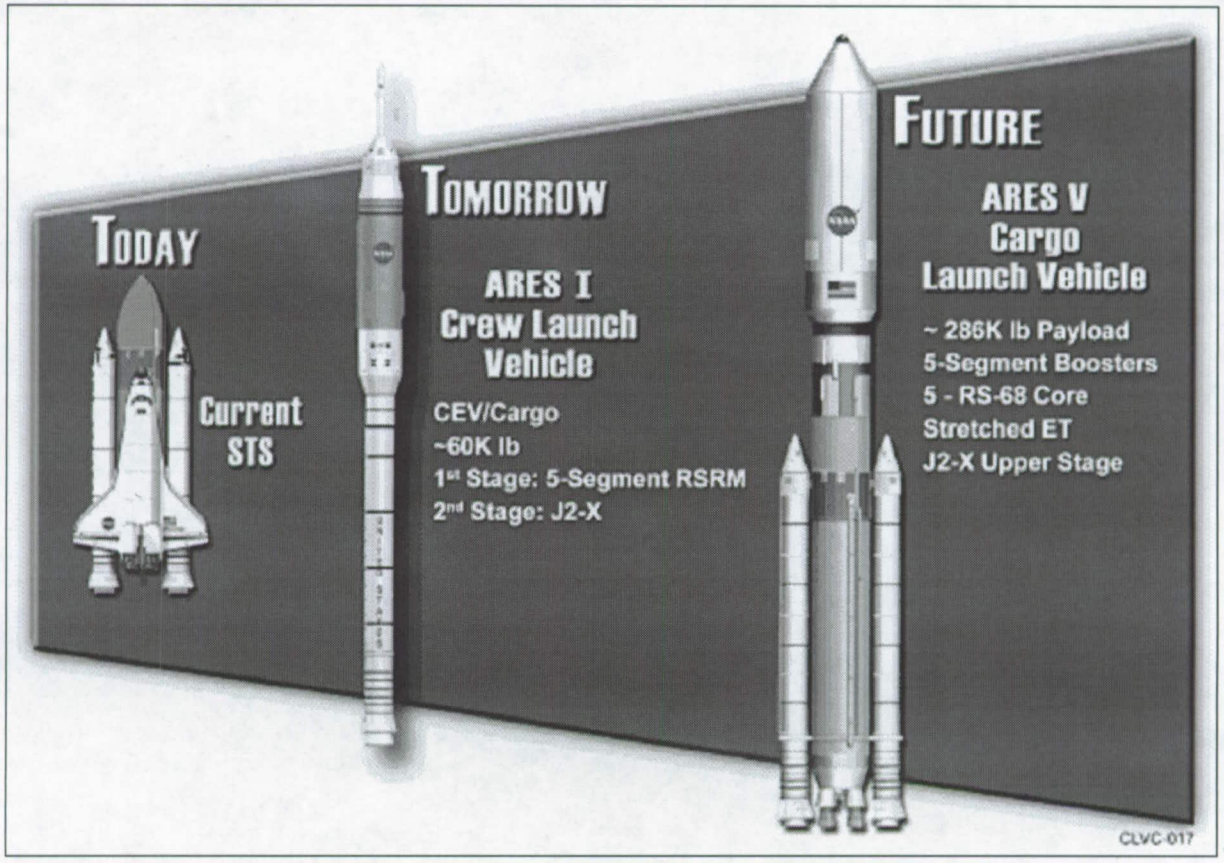
Introduction



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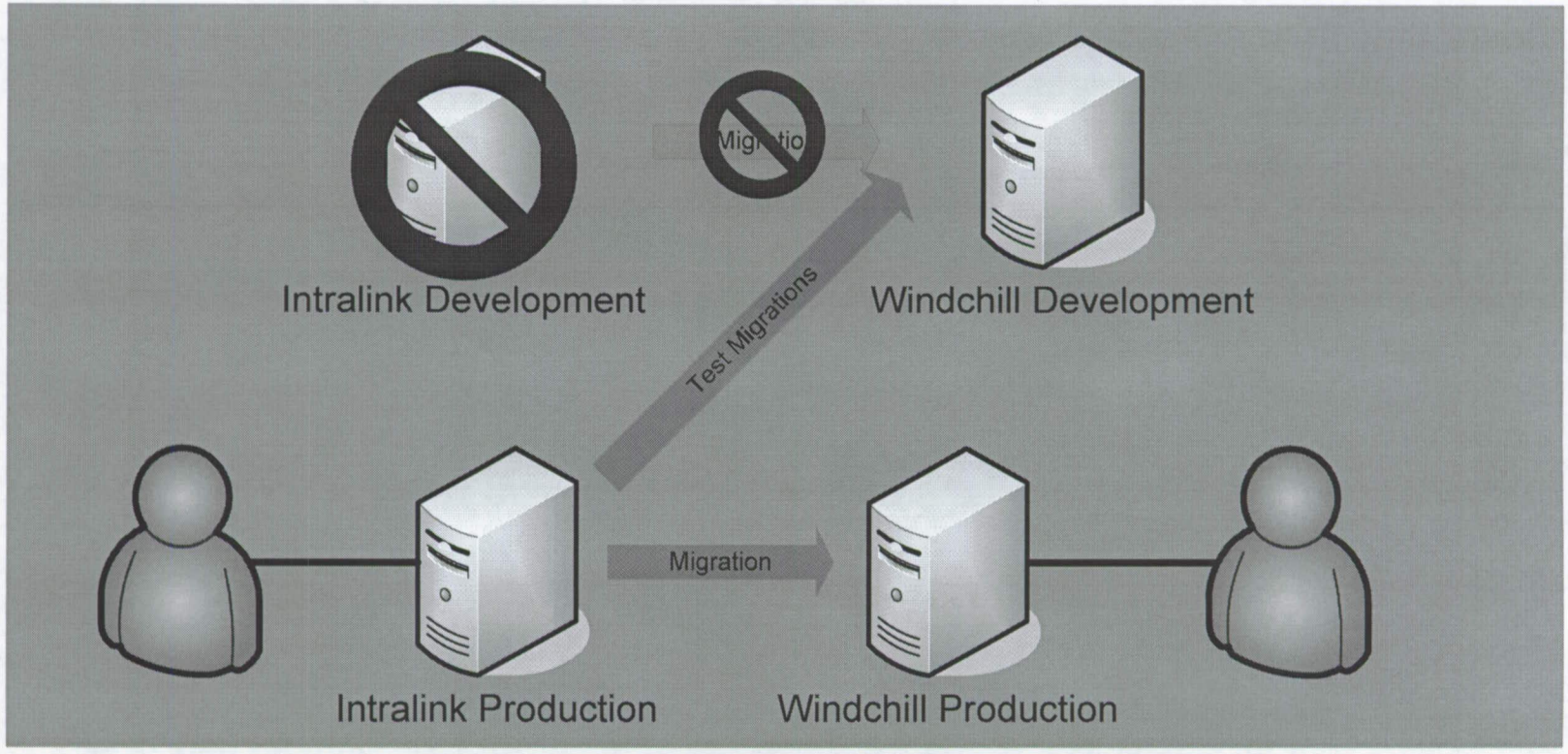
Migration Setup



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The Situation

- June, 2008 – Final Deciding Meeting
  - Manually migrate vs. Intralink migration tool
  - 40,000 Files
- October 1, 2008 – Intralink server obsolete

- Training availability – None
- Time available to procure outside company – Not enough
- Replacement server – Not an option
  - Remaining options: Self migrate

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Additional Factors

- PTC Migration Data Questionnaire – Low complexity
  - Good candidate for customer-led or services-led

- Backup plan in case of failure
    - Manual migration

- Computer Engineer on staff

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"Failure is not an option."

–Apollo 13 Movie
– Based on a quote by Gene Kranz

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Windchill Setup

- For purposes of this presentation:
  - *I:\ - Intralink* *W:\ - Windchill*
- *Installation will not be covered*
  - *Pre-Copy option used*
- *No Windchill part creation*
- *No user-based attributes*
- *Primarily Pro/E files*
- *Few family tables*

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Different revision schemes

- Create three StateBasedVersioning.xml files in W:\...\loadFiles\pdmlink
  - Pre-migration (setup)
  - During migration (flat)
  - Post-migration (final)
- Remove any duplicate scheme values
- *java wt.series.LoadFileBasedSeries <pre-migration>*
- *enumCustomize*
- Add new revision scheme type
- Recompile: Ant –f makejar.xml
- Selectable in the lifecycle

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Filed Based Versioning

- StateBasedVersioning.xml used during migration must be a flat file based versioning file with only Intralink scheme
- Migrator only accepts file based versioning, single scheme

```
<?xml version="1.0" encoding="UTF-8"?>
<scheme>
<series name="StateBased">
        <value>A</value>
        <value>B</value> …
```

- See also PTC TPI134560

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State Based Versioning

Pre-Migration Setup	During Migration	After Migration
<seed name="NUMERIC"> .... <seed name="ASME"> <value>-</value> </seed> <seed name="MILSTD"> <value> A </value> <value> B </value> .... <value> Y </value>	<series name="StateBased"> <value> PRE </value> <value> - </value> <value> A </value> <value> B </value> ... <value> YY </value>	<seed name="NUMERIC"> .... <seed name="MIGRA"> <value> PRE </value> </seed> <seed name="ASME"> <value> - </value> <value> A </value> <value> B </value> .... <value> YY </value>

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System Preparations

- Create lifecycles using new revision scheme
  - Make sure lifecycles are enabled
- Create workflows if necessary
  - Out of the box vs. customized
- Verify permissions
  - Do new lifecycle states need new permissions?
- Setup object initialization rules (OIR)
  - wt.series.HarvardSeries.StateBased
- Create products and libraries
  - Subfolders will be created by Migrator tool

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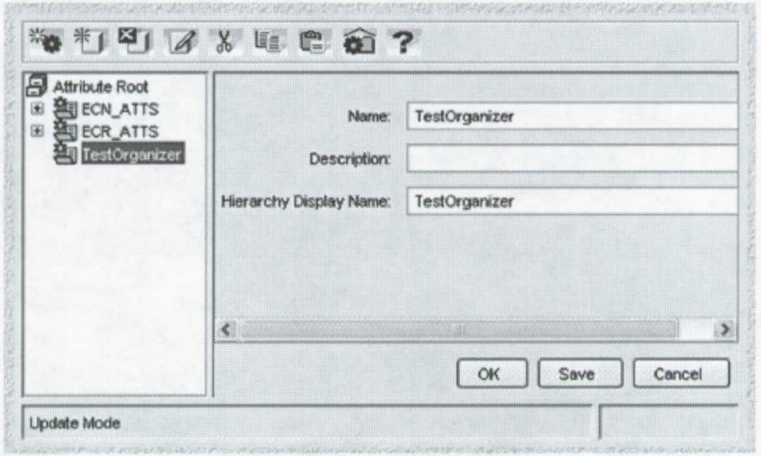
Test Organizer

- Create Test Organizer
  - Site>Utilities> Business Administration>Attribute Definition Manager
  - Name: TestOrganizer



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Preparations

Intralink Server

- Backup Intralink data
- On Intralink Server
  - I:\...dataserver\intralink\tools\bin\
    - Locking of Intralink
    - healing_before_migration.tcl
    - Set_common_name.sql (optional as needed)
- Manually copy files to Windchill server (pre-copy option)
  - Move all data files from Intralink data server To Windchill server directory

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Preparations

Windchill Server

- Backup Oracle database
  - DOS>exp system/<PW>@<user> file=<File location/name>.dmp owner=<data owner> log=exp.log
  - See also PTC TPI132658
- Backup Site.xconf file

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Migration.properties

- W:\ILMigration\codebase\com\ptc\migration\migration.properties
- Set up during install, but will need to modify
- ilmigpassword=migchangeme?
- nonDefaultLDAP=
- doFileTransfer=False/True
- truncateILLargeColumns=false
- TruncateUDAValue=false
- LinkToExistingPart=false

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Windchill Mapping
– Migration begins here, almost…

Ildataloader Mapping

- W:\…ILMigration\bin
- Step 1: Run Ildataloader Mapping

  [1] – This will test your connections to Intralink

  [2] – This will test your connections to Intralink and download the data you need
- Common Errors: Misspelling the migration password, Intralink not being locked down, security permissions
- Step 2: [6] – Download All data (mapping files)

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Windchill Mapping

- Mapping files
  - W:\...*ILMigration\loadFiles\ilwcmigration*
- Appcreator.properties – Don't touch
- Filevaults.properties – Setup file
- Docrules.properties – Setup file
- Ibamap.properties – Attribute mapping
- Epm_folder_rsrl_map.properties – File mapping
- Pitdmapping.properties – Type mapping
- Usermap.properties – User mapping

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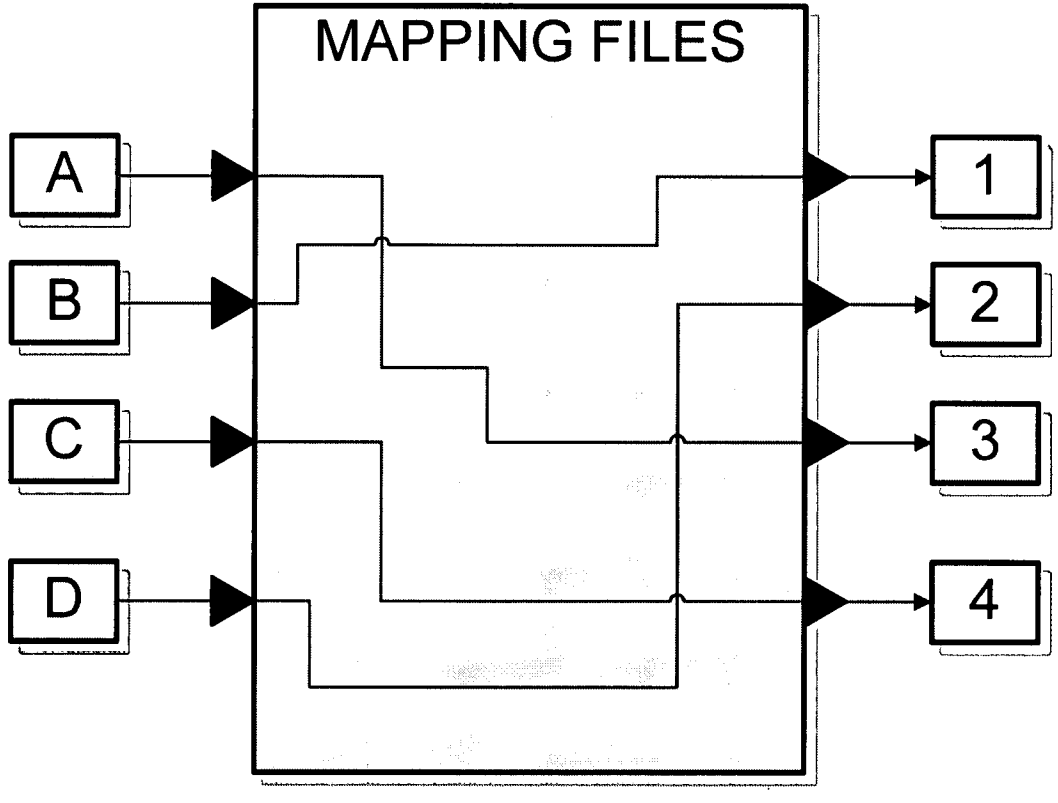
Mapping Files



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Filevaults.properties – Setup file

- FILEVAULT.<Intralink server>:i:\...\vault=defaultcachevault

- LOCAL_PRECOPY_PATH.<Intralink server>:i:\...\vault=<Windchill server>:W:\...\precopy

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Docrules.properties – Setup file

- EPMDOC_NUMBER
  - NAME_WITH_EXTENSION
  - AUTO_NUMBERING
    EPMDOC_NUMBER=NAME_WITH_EXTENSION
- WTDOC_NUMBER
  - NAME_WITH_EXTENSION
  - AUTO_NUMBERING
    WTDOC_NUMBER=NAME_WITH_EXTENSION

    - Intralink = Windchill
    - PTC Common Name = Name
    - Filename = Filename
    - Filename = Number
  - Script to modify Intralink available from PTC: Set_common_name.sql

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lbamap.properties – Attribute mapping

- <Pro/INTRALINK Attribute Name>

  =

- <Windchill Attribute Name>

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Epm_folder_rsrl_map.properties – File mapping Simple Version

- RS.BEGIN.70.<Intralink lifecycle>
  - RS.DEF.BEGIN.<Intralink lifecycle>
    - <Intralink lifecycle>=<WC lifecycle>
    - <Intralink lifecycle>.1.<Intralink LC State>=<WC LC state>
    - <Intralink lifecycle>.2. <Intralink LC State>=<WC LC state>
  - RS.DEF.END. <Intralink lifecycle>

    ##
  - REPOSITORY=<WC Product/Library>
    - Root Folder/<Intralink folder>=/<WC folder>
    - Root Folder/<Intralink folder>=/<WC folder>
- RS.END.70. <Intralink lifecycle>

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Epm_folder_rsrl_map.properties – File mapping (Advanced version)

- Separate products

...

Root Folder/<Intralink folder>=/<WC folder>

Repository = <WC Product/Library>

Root Folder/<Intralink folder>=/<WC folder>

...

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Epm_folder_rsrl_map.properties – File mapping (Advanced version)

- Separate lifecycles

```
        ...
        Root Folder/<Intralink folder>=/<WC folder>
        #
RS.DEF.BEGIN.Root Folder Release Scheme
Root Folder Release Scheme=<WC Life Cycle>
Root Folder Release Scheme.1.<Intralink LC State>=<WC LC State>
RS.DEF.END.Root Folder Release Scheme
        #
REPOSITORY=<WC Product/Library>
        Root Folder/<Intralink folder>=/<WC folder>
        ...
```

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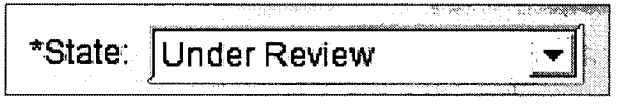
Important Tips

- Folder mapping is case sensitive and space sensitive.

- Lifecycle states are defined by their system name when mapping, no spaces, all upper case
    - Under Review = UNDERREVIEW



- Can only change lifecycle on new parts, or upon revision.

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Pitdmapping.properties – Type mapping

AnsysOut=0/@OTHER/@OTHER/@NULL/@NULL

AssemMembInfo=0/@PROE/@OTHER/@NULL/@PROE_UGC

Assembly=0/@PROE/@CADASSEMBLY/@NULL/@PROE_UGC

BendOrder=0/@PROE/@OTHER/@NULL/@PROE_UGC

BumpMapTexture=0/@OTHER/@OTHER/@NULL/@NULL

...

If only migrating Pro/E files, can ignore.

Otherwise:

for EPMDocument:

pitypedefname=0/@AuthoringApplication/@EPMDocumentType/
@SubType/@Category

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Usermap.properties – User mapping

- SmithJ = smithj
- If using Windchill provided LDAP
  - Will create users automatically for you, and duplicate if spelling/domain is different
- If mapping to company controlled LDAP
  - Must map to each specific user and map to LDAP (spelling/capitalization)
  - TAN 141054
- Mapped all files to "Admin"
    - Not suggested for Owner controlled permissions

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Mapping continued

- Assuming everything is set up perfectly, you are done with the hard part
- Rarely is it set up 100% correctly
- Ildataloader Mapping
  - [3] – Reconcile data
    - [1] – User data
    - [2] – Folder and release scheme
    - [3] – User attributes
    - [4] – Reconcile all

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Conflict Resolution

- Now to see where things went wrong
- Log Files W:\…*ILMigration\loadXMLFiles\ilwcmigration\reports*

Conflict Report: EPM Folder and ReleaseScheme/Level Mapping Conflicts

Created On: Sat O
From: Pro/INTRAL
Description: This is

Conflict Report: User Mapping Conflicts

Invalid Conflicts
Description: Invalid
Resolution: Please s
Conflicting Data
52:REPOSITORY=

Created On: Sat Oct 11 14:35:20 EDT 2008
From: Pro/INTRALINK 3.4F000 ( )
To: Windchill PDMLink 8.0
Description: This is a list of conflicts generated during user mapping.

User conflicts during Mapping
Duplicate Conflicts
Description: The following users were mapped to more than one Intralink user.
Resolution: Please verify that these duplicate entries are intentional.
Conflicting Data
migrator

Reconcile and Repeat until everything is acceptable

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Loading Data

From Ildataloader Mapping

- [4] – Load admin data
  - [5] – load all data
- [5] – Map admin data
  - [6] – map all data
- [6] – Doc migration rules

- After each step it is a good idea to check for any errors, any time you restart method server isolate logs to isolate problems (logs get pretty extensive depending on setting)
  - W:\..\logs
  - W:\...\ILMigration\logs\migration-client.log

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Loading Data

From Ildataloader Mapping

- [7] – Pre-configuration of part creation
  - [1] – Download part data (check like mapping data)
  - [2] – Reconcile part data
  - [3] – Load part data
  - [4] – Map part data
  - [5] – Create migration rules

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Errors

- If you run into an error you may need to reload the data and remap the data
- The only step you cannot duplicate is “Map all data”
  - Must delete migration site or step through 2,3,4,5
- wt.series.SeriesIncrementOutOfBoundsException: The series value has reached its maximum value: YY, series=StateBased

  - Make sure you have every revision of Intralink included
- The revision value is not valid within the series: Z, series=MilSpec

  - Use state based in OIR, or make sure it includes every revision
- java.lang.NullPointerException

  - ? This error varies

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Windchill Migration

- Now begins actual migration
- Ildataloader DocResume
  - Conflict resolution with Ildataloader MergeObjects
    - Run>equality>yes
    - Source is master checked for all
    - Items placed based on revision
  - Renaming objects
    - File is created
- DocResume is where most problems will arise

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Windchill Migration

- Ildataloader Document #
  - — # = Number of threads/number of processors
- Ildataloader Link #
- Ildataloader FT #
- Ildataloader UDA #
- Ildataloader AsStored #
- Ildataloader Baseline #
- Ildataloader RenameHistory #
  - *Ildataloader RTPForm #*

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Windchill Migration

- Ildataloader FileTransfer #
  - Longest running portion
- Ildataloader PostMigrationDataCheck

- If you choose Windchill part creation
- Ildataloader PartResume
- Ildataloader WTPart #
- Ildataloader BuildProcess #
- Ildataloader Baseline #

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lldataloader PostMigrationDataCheck

- Creates report at W:\...\ILMigration\logs\postmigrationdatacheck.log

```
================================================================
        logs for function: fixNullAttrvalFamTabs
================================================================
No. of cells with no definition = 0
No. of integer/boolean/float cells = 0
No. of string cells = 0
No. of timestamp cells = 0
```

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Ildataloader MigrationStatus – Report

- Creates report at W:\...\ILMigration\logs\migration-client.log

```
==========================================================================
Status of Intralink Objects Migration...
==========================================================================
                    Number of Intralink Objects      Number of PDMLink Objects
                    to be migrated                   actually migrated

  EPMDocumentMaster  #                               #
  EPMDocument        #                               #
  WTDocumentMaster   #                               #
  WTDocument         #                               #
  MemberLink         #                               #
  ReferenceLink      #                               #
  Files              #                               #
  Baselines          #                               # (with Documents only) + # (with WTParts)
 All DocumentMaster attributes were successfully migrated
 All Document attributes were successfully migrated
 All Link attributes were successfully migrated
 No WTParts were created because you have not specified documents
for which you want to create WTParts
```

....

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After Migration

- If you have to, resume Intralink service
- Upon migration completion lock down Intralink access
- Backup migration Site.xconf
- Restore original Site.xconf

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After Migration

- Return first created Statebasedversioning.xml file with new revision scheme

- java wt.series.LoadFileBasedSeries "W:\...loadFiles\pdmlink\StateBasedVersioning.xml" -load

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Additional Tips

- Try everything on developmental server even if you have an empty production server.
- If you recover from Oracle, make sure to repair it.
- System Configurator/Xconfmanager
  - Wt.series.integerSeries.min=0
- Preference Manager
  - /ProjectLink/PDMLinkFoldersAndContentsView = TRUE
- Make sure all users are trained as close as possible to the implementation

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Helpful Documents

- Pro/Intralink 8.0 Data Migrator Administrators Guide
- TPI134560 - Filebased versioning scheme to a state-based versioning scheme, as part of post migration activities.
- TPI132621 - An alternate method of file transfer which transfers metadata only using "ildataloader FileTransfer <#>" while the files are copied through the O/S using the file "fileMap.csv".
- TPI132658 - A simple backup method to restore the blank PDMLink 8.0
- TPI137992 - ildataloader Document: (wt.series.seriesResource/0)wt.series.SeriesIncrementOutOfBoundsException"
- TPI132067 - ildataloader DocResume: java.lang.NullPointerException
- TPI140777 - Ildataloader Document :wt.series.SeriesIncrementInvalidException

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So how did things go?

- 7/15/08 Planning meeting kickoff
- 7/15/08 Intralink cleanup – started
- 7/15/08 Initial mapping of data
- ~~7/27/08 Extraction of data~~
- 7/30/08 Extraction of data - (Make sure you lock Intralink)
- 8/10/08 Initial mapping of data – (Check migration password)
- ~~8/10/08 Metadata test migration~~
- 8/17/08 Metadata test migration – (Use a filebased series)

Red Lines indicate unsuccessful attempts due to technical issues.

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So how did things go?

- 8/27/08 Test migration of data #1 - Tool/data validation
  - Does the data migrator tool work on my data?
- ~~8/31/08 Test migration of data #2 - Process validation~~
  - Can you migrate the data in the promised time window?
- ~~9/3/08 Test migration of data #2 - Process validation~~ (revisions)
- ~~9/8/08 Test migration of data #2 - Process validation~~ (revisions)
- 9/14/08 Test migration of data #2 - Process validation – (revisions)
- 9/25/08 Test migration of data #3 - Process validation
- 10/10/08 Intralink Goes Down (Friday morning)
- 10/10/08 Data migration #3 - Production
- 10/10-11/08 Final validation and preparations to go live
- 10/13/08 Windchill goes live (Monday morning)

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Final Results

	Number of Intralink Objects to be migrated	Number of PDMLink Objects actually migrated
EPMDocumentMaster	11540	11540
EPMDocument	47046	47046
WTDocumentMaster	1	1
WTDocument	3	3
MemberLink	442605	442605
ReferenceLink	243080	243080
Files	39351	39350
Baselines	1	1 (with Documents only) + 0 (with WTParts)

Total files that could not be migrated:1

- Total time for final migration, about 8 hours.
- 8 Total migration runs
- 7 Tech support calls

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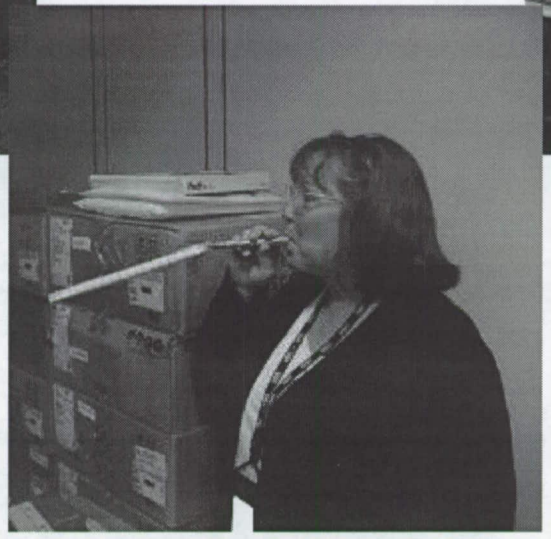
Final days for the Intralink Server



Our IT representative celebrating
one less resource to manage.

The last shutdown.

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Questions?

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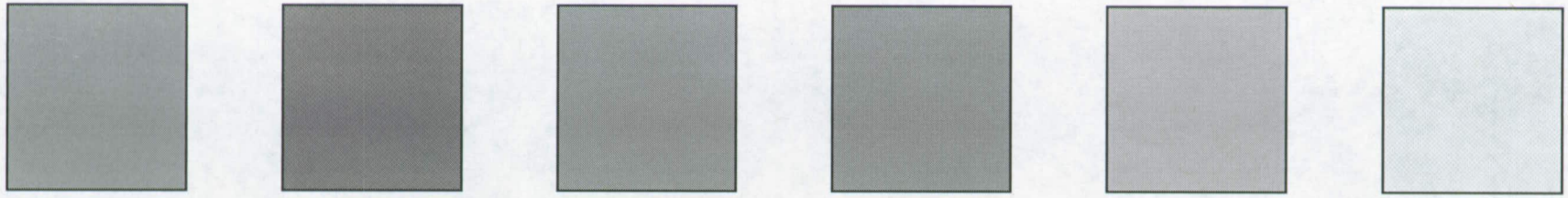
Color Palette



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